

REMARKS/ARGUMENTS

Claims 1-21 are pending in the application. Reconsideration and a withdrawal of all outstanding rejections is hereby respectfully requested in view of the above amendments and the following remarks.

Applicant has amended the claims to refer to printed circuit boards and printed circuit foils in order to more particularly articulate the present invention and to more particularly distinguish the Applicant's present invention over the cited references. Claim 1 has been amended to distinctively refer to a device for transporting printed circuit boards or printed circuit foils in a conveyorized line for wet-processing of the printed circuit boards and printed circuit foils. Claim 14 also has been amended to distinctly differentiate the Applicant's present invention as a method of transporting printed circuit boards or printed circuit foils in wet-processing lines, and, furthermore, recites the step of wet-processing with a treatment chemical the printed circuit boards or printed circuit foils which are being transported with the rollers (1, 2). Support for the amendments is contained in the Specification, at p. 14, lines 14-21, and no new matter has been introduced.

The Rejection of Claims 1-4 and 6-21 As Being Obvious Over U.S. 5,622,363 ("Beaudreau") and U.S. 5,501,735 ("Pender")

Claims 1-4 and 6-21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Beaudreau (5,622,363) in view of Pender (5,501,735). This rejection is respectfully but strenuously traversed and reconsideration and a withdrawal of the rejection is hereby respectfully requested.

The Examiner contends that Beaudreau discloses all the features of pending claims 1 and 14, though acknowledges that Beaudreau is deficient and fails to disclose bordering elevations. Specifically, the Examiner acknowledges that Beaudreau does not disclose bordering elevations at the end of the rollers annularly encircling the respective one of the rollers and facing each other and which are located outside of the useful area of a conveying path in the processing line. The Examiner relies on Pender for its claimed teaching of the use of bordering elevations (which the Examiner considers to be the elements 70, 71, 72, 28 of Pender). The Examiner considers that the rollers annularly encircle the respective one of the rollers and face each other and also that they are located outside of a useful area of a conveying path in the processing line, referring to Fig. 2 of Pender. The Examiner also asserts that that is done simply for the purpose of simplifying the drive for the roller pair (citing to col. 4, lines 45 – 65).

The Examiner contends that it would have been obvious to combine Beaudreau with Pender because employing the bordering elevations of Pender in the device (or method) of Beaudreau could serve the purpose of simplifying the drive for the roller pair.

Applicant's invention is not obvious in view of the references cited by the Examiner. Applicant's invention relates to transporting printed circuit boards and printed circuit foils for wet processing in conveyorized lines. Applicant has amended the claims (see, e.g., claims 1 and 14) to more particularly recite that the device and method are used for wet processing of the printed circuit boards or printed circuit foils. Beaudreau does not disclose a device (or method) which would be suitable for

transporting printed circuit boards or printed circuit foils. While Applicant acknowledges that Beaudreau discloses transporting foils and the like, however, the application field and purpose of Beaudreau's device (or method) is different from that of the Applicant's present invention.

Beaudreau relates to the sheet feeding, more specifically to the feeding and separating of film sheets from a stack of films in which multi-sheet feeding is avoided. The sheets of Beaudreau are to be understood as photosensitive material, paper, transparencies, foils and the like. (Col. 1, lines 5-17). Those skilled in the art will very readily find such description to be applied to photocopying machines and the like and not to the transport of printed circuit boards and printed circuit foils, which latter transport is performed in machines in which these boards and foils are wet-chemically treated. Moreover, there is no separation of sheets required in the device (or method) of the Applicant's present invention.

The Beaudreau device relates to the separation of films which are stacked to be treated individually. Referring to Fig. 4 of Beaudreau, for example, a stack of sheets 114 and a top sheet 134 separated from the stack are shown. The top sheet 134 is then transferred to the right and, if two such sheets should be taken from the stack instead of one, the very top sheet 134 is separated from the second sheet using the twin rollers 118, 120. These rollers are both rotated counterclockwise (in the same direction; col. 2, line 66-col. 3, line 2), such that two sheets traveling therebetween will be separated from each other (by forwarding the top sheet 134 along the sheet path and by urging the lower sheet back to the stack of sheets 114).

It would not have been obvious to apply the teachings of Beaudreau, let alone would it be workable with the Applicant's present invention. Beaudreau describes a device (or method) which applies to a technical field which is completely different from that of the present invention. Beaudreau's device and method are different from that of the present invention.

Beaudreau's device (or method) does not serve the same purpose as the Applicant's present invention. Applicant's invention serves to prevent dirt from being impressed into the surface of sensitive workpieces in order to prevent or minimize the impairment of the function thereof, whereas Beaudreau aims at separating sheets from a stack of sheets. Beaudreau does not concern itself with carefully handling sensitive sheets but rather rub onto the surfaces thereof when they pass the twin rollers 118, 120, as these rollers act in opposing directions in order to separate several sheets and thus cannot avoid that the surfaces thereof are abraded superficially and eventually damaged.

For these reasons, the Beaudreau reference not only is irrelevant to the present invention, but rather, it teaches away from the invention by accepting any impairment caused by the opposing action of the twin rollers. The surfaces thereof may severely be scratched if dirt would be present on the surface of the sheet. This will be due to the fact that the two rollers apparently permanently rotate in the same rotating direction, even if only one sheet is getting access to the gap between the two rollers ("The contact surfaces 144 of the top roller 118 provide a coefficient of friction between the rollers 118 and 120 and is being urged in both directions"; col. 5, lines 17-22.)

Whereas staggering of the O-rings on the rollers 118 and 120 in the device of Beaudreau et al. serves to create distinct coefficients of friction between the contact surface 144 of the top roller 118 with a sheet, between the sheets, or between a sheet and the contact surface 146 of the bottom roller 120, respectively, such staggering in the device of the Applicant's invention, unlike in Beaudreau, serves to prevent any pressure normal to the surface of the circuit foils to be transported, in order to prevent impairment thereof by impressing dirt particles. The disclosure of Beaudreau actually teaches away from the Applicant's claimed invention.

A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be led in a direction divergent from the path that was taken by the applicant.

In re: Gurley, 27 F.3d 551, 31 U.S.P.Q. 2d 1130 (Fed. Cir. 2006).

Here, the configuration of the prior art would not be looked to by one of ordinary skill in the art for a teaching of the present invention, since doing so would frustrate the purpose of the Applicant's present invention by teaching instead of to prevent impression of debris damage to the workpieces, to actually promote the destruction of the printed circuit boards or circuit foils passing through a treatment line.

rejection [] is improper for reasons existing within the disclosures of the references themselves, namely, that the references themselves teach away from the combination. . . . Thus, a combination of [the cited references] would produce a seemingly inoperative device.

In Re: Sponnoble, 405 F.2d 578, 587, 160 U.S.P.Q. 237 (CCPA 1969).

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Where a reference teaches away from the invention that is sufficient to defeat an obviousness claim. (*See Winter Int'l Royalty Corp. v. Ching-Rong Wang*, 202 F.3d 1340, 53 U.S.P.Q. 2d 1580 (Fed. Cir. 2000).)

Accordingly, for the reasons set forth above, there is no *prima facie* case of obviousness. Those skilled in the art would not have looked to the teachings of Beaudreau et al. but rather disregarded them.

Even if the Examiner would consider Pender to be the starting point for discussing obviousness, Beaudreau will be of no relevancy for the reasons set forth above, because the Beaudreau device teaches away from the present invention, since the purpose aimed at when sensitive material (such as Applicant's printed circuit boards and foils) is to be processed in such lines will not be fulfilled but rather counteracted such that those skilled in the art would not have any reasonable expectation of a success when considering Beaudreau.

For the reasons set forth above, Applicant hereby respectfully requests reconsideration and a withdrawal of all outstanding rejections. Early allowance of the pending claims is earnestly solicited.

CONCLUSION

As set forth above, it can be appreciated that the Applicant's inventive solution, as disclosed and claimed, is novel and unobvious, and solves a problem in the wet-processing art which the prior art references do not address. Applicant's invention should be patentable.

If further matters remain in connection with this case, the Examiner is invited to telephone the Applicant's undersigned representative to resolve them.

If an extension of time is required, one is hereby requested.

Respectfully submitted,
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